

Appl No.: 10/783,178

Atty. Dkt.UCF-371

**Amendment to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claim 1-6 (Canceled)

Claim 7 (Currently amended): A method of providing a wide field of view (FOV) to a head mounted display comprising the steps of:

(a) combining an Artificial Reality Center (ARC) display component and an optical tiling component; and,

(b) integrating said display component and said optical tiling component produce a left projected image and a right projected image said integrating step comprising:

providing optical tiling component for a left eye of the user; and

providing optical tiling component for a right eye of the user, wherein said

optical tiling for the left eye and said optical tiling for said right eye provides an

overall binocular field of view (FOV) greater than about 80 degrees is realized

from the left projected image tiled with the right projected image.

Claim 8 (Original). The method of claim 7 whereby an overall binocular FOV greater than about 120 degrees is realized.

Claim 9 (Canceled).

Claim 10 (Currently amended) The method of claim 7 wherein the combining ~~combining~~ step also includes a compact lens when the distance between the ARC display component and said optical tiling component is less than approximately 150 mm.

Claim 11 (Original). The method of claim 10 wherein said compact lens is a Fresnel lens.

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Claims 12-22 (Canceled).

Claim 23 (Currently amended) An optical projection system comprising:

~~a single~~ an optical tiling system for producing a tiled projected image, wherein  
said optical tiling component comprises:

a side projection system for projecting a side image;

a top projection system for projecting a top image; and

an optical tiling component having an optical cube and an optical wedge  
connected with said optical cube for receiving said side image and said top image,  
wherein said optical cube and said optical wedge reflect said side image and said top  
image.

Claim 24 (Previously presented). The system of claim 23 wherein said optical wedge  
deflects said side image to achieve optical tiling in a horizontal direction.

Claim 25 (Previously presented). The system of claim 23 wherein said optical tiling  
system includes:

a left and a right optical tiling system for producing a left and a right tiled  
projected image, wherein said left and said right tiled projected image covers a greater  
than approximately 80 degrees field of view per side.

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Claim 26 (Currently amended). The system of ~~claim 23~~ claim 25 wherein said left and said right tiled ~~optical~~ projected image overlap to provide said tiled projected ~~optical~~ image covering a horizontal field of view greater than approximately 70 degrees.

Claim 27 (Previously presented). The system of claim 26 wherein the overlapped left and right tiled projected optical image provide greater than approximately 50 degree vertical field of view.

Claim 28 (Previously presented). The system of claim 25 wherein each of said left and said right optical tiling system comprise:

- a side projector for projecting a side image;
- a top projector for projecting a top image; and
- an optical tiling component for receiving and reflecting said side image and said top image to produce said tiled projected image at said reflective surface for viewing.

Claim 29 (Previously presented). The system of claim 28 wherein said tiled projected optical image covers greater than approximately 120 degree horizontal field of view.

Claim 30 (Previously presented). The system of claim 23, wherein said retroreflective surface is an Artificial Reality Center (ARC) display component having a greater than approximately 70 degrees field of retroreflection.

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Claim 31 (Previously presented). The system of claim 30 wherein said ARC display component is located at a distance greater than approximately one-half meter from said optical tiling system.

Claim 32 (Previously presented). The system of claim 30 wherein the optical projection system is used with a helmet to provide a head mounted projection display.

Claim 33 (Previously presented). The system of claim 32 wherein said ARC display component is located at a distance approximately 100 mm from the head mounted projection display, said system including:

a compact lens located between said optical projection system and said retroreflective surface.

Claim 34 (Canceled).

Claim 35 (Currently amended). The method of ~~claim 34~~ claim 7 wherein said integrating step further includes:

projecting a left and a right top image; and  
projecting a left and a right side image, wherein said left and said right top image is tiled with a corresponding one of said left and said right side image to produce a left and a right tiled optical image.

Claim 36 (Previously presented). The method of claim 35 wherein said left and said right tiled optical image overlap.

Claim 37 (Currently amended). The method of claim 7 ~~claim 34~~, wherein said optical tiling for the left eye and said optical tiling for said right eye provides said overall

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binocular horizontal FOV greater than approximately 120 degrees.

Claim 38 (Currently amended) A head mounted projection display (HMPD) comprising:

an optical tiling system for producing and tiling a left and a right projected image to produce a tiled projected image, wherein the optical tiling system includes a left and a right optical tiling system comprising:

a top projection system for projecting a top image;

a side projection system for projecting a side image; and

an optical tiling component for receiving and reflecting said top and said side image to produce said tiled projected image; and

an artificial reality center display having a greater than approximately 70 degrees field of retroreflection for receiving and retro-reflecting said tiled projected image to a user.

Claim 39-40 (Cancelled).